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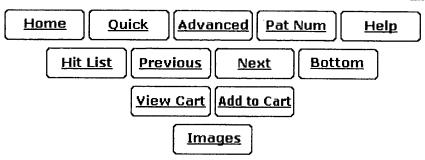
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United States Patent

Farina , et al.

4,785,080

November 15, 1988

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## Labeled analytes

### Abstract

A highly sensitive, immunoassay method for determining the amount of an analyte in a sample containing a known analyte in an unknown concentration is provided. Sample; a polypeptide-labeled analog of the analyte, an antibody specific for said analyte, a polypeptide partner capable of non-covalently binding with the polypeptide-labeled analyte to form a complex having catalytic activity, and a substrate capable of being converted to a *reporter molecule* by the catalytic activity of said complex are brought together in a medium. The polypeptide-labeled analyte analog is capable of competitively binding to the antibody and the polypeptide partner, the antibody inhibiting the formation of a catalytically active complex in the absence of analyte, and the concentration of the antibody, polypeptide partner and polypeptide-labeled analyte are such as to cause varying amounts of analyte to be directly related to the conversion of the substrate to the *reporter molecule*. Conversion of the substrate to the *reporter molecule* is then determined, and compared to conversions of substrate to *reporter molecule* obtained with known concentrations of the analyte.

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| **Current U.S. Class:** | 530/402; 435/7.23; 435/7.4; 435/7.9; 435/188; 435/199; 435/207; 530/300; 530/307; 530/308; 530/313; 530/316; 530/323; 530/350; 530/389.2; 530/389.8; 530/391.9; 530/399; 530/403; 530/404; 530/405; 530/406; 930/10; 930/240 |
| **Intern'l Class:** | C12N 009/22; C12N 009/38; C12N 009/96; C12Q 001/00; C07G 007/00; C07K 013/00; G01N 053/00 |
| **Field of Search:** | 435/4,7,18,188,199,207,805,810 424/8,12,85 530/386,388,327,399,300,307- 308,313,316,323,350,388,398,399,402,403-406 |